



Carbon Monoxide Poisoning in Maine

by Joyce Roy

Every year, carbon monoxide (CO) gas poisons people in Maine. Exposure to carbon monoxide is not only dangerous, but it can be deadly. Because carbon monoxide is odorless and colorless, the first warning of exposure may be sickness.

Propane and gasoline-powered engines can produce excessive CO if they are not well maintained or if they are used in poorly ventilated areas.

This past summer 25 Maine workers received emergency treatment as a result of exposure to CO at two different worksites. In both incidents, propane-powered equipment was the source of the CO.

The first incident took place in late July when workers were exposed in the cold storage area at a blueberry packing plant, an enclosed area about the size of a football field. Propane-powered forklifts were used to shuttle boxes of wild blueberries from the processing line to the cold storage chamber. Due to the cold temperature, the workers rotated in and out of the area and therefore, were not exposed to the gas continuously.

Around 4 A.M., three workers started experiencing symptoms of carbon monoxide poisoning after working in the cold storage area. They went to their local hospital and were transferred to St. Joseph's Hospital in Bangor for treatment in the hyperbaric chamber (see related article on page 2) because of high levels of CO in their blood.

A propane forklift identified as a possible source of the CO exposure was taken out of service, but the next day

someone mistakenly used it. As a result, during the night shift, nine more workers experienced symptoms of carbon monoxide poisoning and were sent to the hospital. Five other workers who had been in and out of the cold storage room or around the forklift were seen by physicians as a precautionary measure. All had normal blood levels.

That morning air testing showed CO levels of 300 ppm (parts per million). The propane-powered forklifts were tested for CO emissions and adjusted as needed. The

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Warning Signs of Carbon Monoxide (CO) Poisoning

% of CO in blood	Symptoms
0	No sign in healthy person.
40	Headache in 1-2 hours. Rapid breathing and heartbeat, fainting, confusion.
50	OSHA permissible exposure limit.
80	Headache in 45 minutes. Nausea, vomiting, unconscious in two hours.
160	Headache in 20 minutes, nausea, vomiting, unconscious in 45 minutes.
1500	Immediately dangerous to life and health.

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employer agreed to operate only electric-powered forklifts in this area in the future.

In a separate incident, on August 22, 1999, workers were exposed to carbon monoxide gas and suffered symptoms of poisoning while using propane-powered floor buffers in a retail store. At the time three propane-powered machines were being used instead of the usual one machine. Questionable air circulation may have contributed to the problem.

At 6:30 A.M., workers started to feel ill; firefighters were called in and measured a carbon monoxide level of 245 ppm. At the hospital, eight people received oxygen, two of whom were also treated in the hyperbaric chamber.

These are just two incidents in which CO from propane-powered machinery poisoned Maine workers. The Bureau of Health has also received reports of CO exposure inside potato houses, on fishing boats and at service stations.

Joyce Roy is a public health nurse with the Occupational Health Program, Division of Community and Family Health, Bureau of Health. The Occupational Health Program is responsible for collecting data on nine occupational diseases and agricultural injuries and illnesses in Maine.

To reduce CO exposure if you use forklifts indoors:

- ✓ use electric or natural gas-powered forklifts, if possible
- ✓ keep engines tuned up
- ✓ measure CO levels
- ✓ provide adequate ventilation

CO in the home

Carbon monoxide poisoning is not just a work problem. Generators and malfunctioning furnaces can cause a buildup of CO in homes. Never use a generator indoors and make sure your furnace is operating properly. Many fire departments can help with testing for carbon monoxide and most hardware stores carry home CO detectors.

Hyperbaric Chamber What is it?—

A hyperbaric chamber is a whole body chamber in which atmospheric pressure can be raised above normal levels, allowing the patient to breathe pure 100% oxygen.

Carbon monoxide (CO) binds to the red blood cells that usually carry oxygen to the body. Treatment with hyperbaric oxygen speeds up removal of CO from the body, restoring oxygen delivery to the brain, heart and other sensitive tissues. The amount of time spent in the chamber varies depending on the severity of the CO poisoning.

If you suspect CARBON MONOXIDE POISONING

Once people show symptoms, it's important to act quickly:

- ✓ Remove the person to fresh air
- ✓ Loosen tight clothing
- ✓ Administer CPR if needed
- ✓ Call 911 or the local rescue squad
- ✓ Give oxygen if available
- ✓ Evacuate the building
- ✓ Call the fire department to test CO levels
- ✓ Do not allow anyone to re-enter the building until CO levels are safe

Knowing the symptoms of CO poisoning and acting promptly can save the life of someone you know.

Notes From the Field

OSHA recently released its proposed ergonomic standard. If adopted, the standard will apply to:

- General industry employers with workers involved in manual handling or manufacturing production jobs, and
- Other general industry employers with one or more workers who experience work-related musculoskeletal disorders after the final standard takes effect.

Central to the proposed standard is the job hazard analysis, a method for assessing hazards in order to implement effective controls. We at Safetyworks! believe that job hazard analysis (JHA) is an injury prevention tool which can benefit employers, whether or not it is included in the final ergonomic standard.

OSHA is accepting comments on the proposed standard until February 1, 2000.

A copy of the proposed standard and information about submitting comments and participating in the public hearings are available on OSHA's web site at: <http://www.osha-slc.gov/ergonomics-standard/index.html>

OSHA is also making available, at no charge, a CD-ROM with the regulatory text, the preamble, the complete regulatory analysis and the full discussion of health effects. Both the CD-ROM and printed copies can be ordered over the web or by calling 202-693-1888. These materials will be available on the OSHA website shortly.

Test Your MSDS IQ

Employers must have on hand a material safety data sheet (MSDS) for each hazardous chemical used in the workplace. Below are key MSDS terms. Match them to their definitions.

- | | |
|----------------------|----------------------------------------------------------|
| 1. acute toxicity | a. immediately dangerous to life and health |
| 2. aspiration hazard | b. creates adverse effects in a single dose |
| 3. ceiling limit | c. repeated exposures may cause serious health reactions |
| 4. CHEMTREC | d. deficient oxygen reaching body tissue |
| 5. hypoxia | e. chemical emergency center |
| 6. IDLH | f. danger produced by inhalation |
| 7. PEL | g. parts per million |
| 8. ppm | h. reacts spontaneously with air |
| 9. pyrophoric | i. permissible exposure limit |
| 10. sensitizer | j. shouldn't exceed for any amount of time |

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The editors are Lynne Lamstein, director of outreach and education and Jonathan Lepoff, staff development coordinator. You may reach them by calling 624-6400. For more information about SafetyWorks!, use our toll-free number: **1-877-SAFE-345**. TTY 1-800-794-1110.



Guides for Working Teens and Their Parents

Do You Work?: A Guide for Working Teens is a booklet that tells teens about hazards on the job and their rights and responsibilities as young workers.

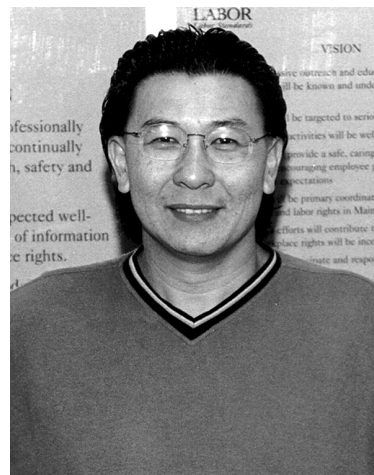
Parents can also learn how to help their teens with a problem at work from the booklet, *Protecting Your Working Teen: A Guide for Parents*.

Both publications are available free from SafetyWorks! Call 1-877-SAFE-345.

Answers to MSDS Quiz: 1.b; 2.f;3.j;4.e;5.d;6.a;7.g;8.i;9.h;10.c

Meet Kim Lim

Kim Lim joined BLS this summer as supervisor of the research unit. Kim comes to BLS with a strong background in public health. In addition to overseeing the annual surveys, Kim is exploring new avenues for research.



WATCH YOUR MAIL !!!!

If you haven't received the new schedule of SafetyWorks! classes by now, call us at 1-877-SAFE-345 and we'll send you one.

Classes fill quickly, so register early.

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Winter 2000

FROM THE DIRECTOR

Congrats to YOU !!

The Centers for Disease Control and Prevention (CDC) recently determined that over this century the average life span of a human has increased by 30 years.

CDC ranked and highlighted the top 10 major changes in the U.S. health environment that have contributed to this increased longevity:

The number three contributor was improvements in workplace safety and health!

Workplace safety and health is not just about the job, it is about adding total quality to our lives — not to mention

adding years to our lives, too.

Congratulations to all of you who work daily to improve workplace safety and health (including the dedicated staff of BLS and the SafetyWorks! team). You are doing vitally important work.

Who knows — if we keep it up, we just might work ourselves out of a job in the next century!



Alan C. Hinsey, Director
Bureau of Labor Standards